

14. (New) An isolated DNA, which encodes a polypeptide with an amino acid sequence in SEQ ID NO:2, and which is about 1975 nucleotides or less in length.

15. (New) The DNA of Claim 12, consisting essentially of nucleotides 269 to 1192 of SEQ ID NO:1.

16. (New) The DNA of Claim 12, consisting essentially of nucleotides 191 to 1192 of SEQ ID NO:1.

17. (New) The DNA of Claim 12, consisting essentially of nucleotides 134 to 1192 of SEQ ID NO:1.

18. (New) A vector comprising the isolated DNA of Claim 12.

19. (New) A vector comprising the isolated DNA of Claim 13.

20. (New) A vector comprising the isolated DNA of Claim 14.

21. (New) A vector comprising the isolated DNA of Claim 15.

22. (New) A vector comprising the isolated DNA of Claim 16.

23. (New) A vector comprising the isolated DNA of Claim 17.

24. (New) A cell transformed with the isolated DNA of Claim 12.

25. (New) A cell transformed with the isolated DNA of Claim 13.

26. (New) A cell transformed with the isolated DNA of Claim 14.

27. (New) A cell transformed with the isolated DNA of Claim 15.

28. (New) A cell transformed with the isolated DNA of Claim 16.

29. (New) A cell transformed with the isolated DNA of Claim 17.

30. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 24 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

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31. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 25 in a medium suitable for expressing the α 1,4-galactosyltransferase; and recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

32. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 26 in a medium suitable for expressing the α 1,4-galactosyltransferase; and recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

33. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 27 in a medium suitable for expressing the α 1,4-galactosyltransferase; and recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

34. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 28 in a medium suitable for expressing the α 1,4-galactosyltransferase; and recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

35. (New) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 29 in a medium suitable for expressing the α 1,4-galactosyltransferase; and recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.